

**WHAT IS CLAIMED IS :**

1. A method for the allocation of resources in a communications system comprising several stations, at least two of which are not within range of visibility, the method comprising the following steps:
  - 5       defining a graph of competition between the different stations;  
       assigning time intervals to each station in making successive passages on all the stations and carrying out the following steps at each passage and for each station:
    - 10           E is an interval of given time interval numbers;  
           n is the smallest natural integer that does not belong to the interval E;
    - if it is not the first passage AND if  $n > N_{max}$ , then no time interval whatsoever is added to the station  $S_i$ ;
    - if it is the first passage OR if  $n \leq N_{max}$ , then n is added to  
       15       the time intervals assigned to  $S_i$ ;
    - the loop of the passages is continued on all the stations:
      - if, during a passage, no time interval has been added to any station, then no other passage is made;
      - if, during a passage, at least one time interval has  
       20       been added, then a new passage is executed.
2. The method according to claim 1, wherein the interval E corresponds to a combination of the time interval numbers already assigned to a station  $S_i$  during preceding passages and time intervals already assigned to the stations  $S_j$  which are related to  $S_i$  by a particular relationship known as a  
 25       relationship of competition.
3. The method according to claim 1, wherein the graph of the relationship of competition is set up according to the following steps: from a relationship of visibility written as  $R$ , a relationship of competition between stations, referenced C, is determined as follows:
  - 30           two stations  $S_i$  and  $S_j$  are in competition,  $S_i C S_j$  if and only if  
           ( $S_i R S_j$  and (NOT  $S_j R S_i$ ))

or

$(S_j R S_i \text{ and } (\text{NOT } S_i R S_j))$

or

$(\exists S_k \text{ such that } S_k R S_i \text{ AND } S_k R S_j \text{ AND NOT } (S_i R S_j \text{ and } S_j R S_i))$

5 4. The method according to claim 1, further comprising the following steps:

a) encoding the identifier  $I$  of each of the stations, on a number  $n$  of bits  $b_1, b_2, \dots, b_n$ , using two symbols corresponding respectively to a reception state and to a transmission state;

b) for any unspecified station  $S_i$ , during an attempt to make  
10 transmission, starting at a given identification slot;

b.1) for  $i$  varying from 1 to  $n$ ,

b.1.1) if the value of  $b_i$  is equal to the symbol corresponding to the reception state, the station  $S_i$  receives during the slot  $k+i-1$ :

if the station  $S_i$  detects a signal sent by another station it considers  
15 itself not to be chosen;

if the station  $S_i$  detects nothing, the station  $S_i$  continues to scan the bits  $b_i$ ,

b.1.2) if the value of  $b_i$  is equal to the symbol corresponding to the transmission state, the station transmits during the slot  $k+i-1$ ;

c) allocating the medium to the station that has performed the step  
20 b.2) without receiving the transmission symbol.

5. The method according to claim 4, comprising a step b.0) preliminary to the step b.1) for the transmission of the transmission symbol by the station  $S_i$  and wherein the steps b.1), b.1.1), b.1.2) may be carried out on identification  
25 slots varying from  $k+1$  to  $k+n$ .

6. The method according to claim 4 using binary encoding and the reception operation "receive 1" when a station detects a signal coming from another station and "receive 0" when it receives no signal and the "send 1" operation when the station transmits a signal in a given slot.

30 7. The method according to claim 4, using an identification number taken in an interval  $[0, N-1]$  with  $N=2^n$ .

8. The method according to claim 1, wherein the broadcasting medium is a radio station and wherein the stations are transmitter-receiver units.

9. A method for the allocation of access to a broadcasting medium by several stations  $S_i$ , wherein the stations are provided with a digital processing circuit adapted to executing the steps of a method comprising the following steps :

defining a graph of competition between the different stations;

assigning time intervals to each station in making successive passages on all the stations and carrying out the following steps at each passage and for each station:

$E$  is an interval of given time interval numbers

$n$  is the smallest natural integer that does not belong to the interval

$E$ ,

if it is not the first passage AND if  $n > N_{\max}$ , then no time interval whatsoever is added to the station  $S_i$ ;

if it is the first passage OR if  $n \leq N_{\max}$ , then  $n$  is added to the time intervals assigned to  $S_i$ ;

the loop of the passages is continued on all the stations:

if, during a passage, no time interval has been added to any station, then no other passage is made;

if, during a passage, at least one time interval has been added, then a new passage is executed.

10. The method according to claim 9 wherein the interval  $E$  corresponds to a combination of the time interval numbers already assigned to a station  $S_i$  during preceding passages and time intervals already assigned to the stations  $S_j$  which are related to  $S_i$  by a particular relationship known as a relationship of competition.

11. The method according to claim 9 wherein the graph of the relationship of competition is set up according to the following steps:

from a relationship of visibility written as  $R$ , a relationship of competition between stations, referenced  $C$ , is determined as follows:

two stations  $S_i$  and  $S_j$  are in competition,  $S_i \text{CS}_j$  if and only if

$(S_i \text{RS}_j \text{ and } (\text{NOT } S_j \text{RS}_i))$

or

$(S_j \text{RS}_i \text{ and } (\text{NOT } S_i \text{RS}_j))$

5 or

$(\exists S_k \text{ such that } S_k \text{RS}_i \text{ AND } S_k \text{RS}_j \text{ AND NOT } (S_i \text{RS}_j \text{ and } S_j \text{RS}_i))$

12. The method according to claim 9 wherein the digital processing circuit is adapted for executing the following steps:

a) encoding the identifier  $I$  of each of the stations, on a number  $n$  of  
10 bits  $b_1, b_2, \dots, b_n$ , using two symbols corresponding respectively to a reception state and to a transmission state;

b) for any unspecified station  $S_i$ , during an attempt to make transmission, starting at a given identification slot,

b.1) for  $i$  varying from 1 to  $n$ ,

15 b.1.1) if the value of  $b_i$  is equal to the symbol corresponding to the reception state, the station  $S_i$  receives during the slot  $k+i-1$ :

if the station  $S_i$  detects a signal sent by another station it considers itself not to be chosen;

if the station  $S_i$  detects nothing, it continues to scan the bits  $b_i$

20 b.1.2) if the value of  $b_i$  is equal to the symbol corresponding to the transmission state, the station transmits during the slot  $k+i-1$ ;

c) allocating the medium to the station that has performed the step b.2) without receiving the transmission symbol.

13. The method according to claim 12 wherein it comprises a step b.0)

25 preliminary to the step b.1) for the transmission of the transmission symbol by the station  $S_i$  and wherein the steps b.1), b.1.1), b.1.2) may be carried out on identification slots varying from  $k+1$  to  $k+n$ .

14. The method according to claim 12 using binary encoding and the reception operation "receive 1" when a station detects a signal coming from another

station and "receive 0" when it receives no signal and the "send 1" operation when the station transmits a signal in a given slot.

15. The method according to claim 9 wherein the broadcasting medium is a radio station and wherein the stations are transmitter-receiver units.
- 5 16. The method according to claim 9 comprising a station configuration device that is separate from the stations.
17. The method according to claim 5, using binary encoding and the reception operation "receive 1" when a station detects a signal coming from another station and "receive 0" when it receives no signal and the "send 1" operation  
10 when the station transmits a signal in a given slot.
18. The method of claim 13, using binary encoding and the reception operation "receive 1" when a station detects a signal coming from another station and "receive 0" when it receives no signal and the "send 1" operation when the station transmits a signal in a given slot.